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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/304,967A

DATE: 01/19/2001

TIME: 13:58:01

Input Set : A:\04646-1.app

Output Set: N:\CRF3\01192001\I304967A.raw

ENTERED

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3 <110> APPLICANT: Lomonossoff, George P.
4 Johnson, John E.
5 Bendig, Mary
6 Jones, Tim
7 Longstaff, Marian
9 <120> TITLE OF INVENTION: Modified Plant Viruses as Vectors of Heterologous
10 Peptides
12 <130> FILE REFERENCE: DOW-04646
14 <140> CURRENT APPLICATION NUMBER: 09/304,967A
15 <141> CURRENT FILING DATE: 1999-05-05
17 <150> PRIOR APPLICATION NUMBER: 08/471,048
18 <151> PRIOR FILING DATE: 1995-06-06
20 <150> PRIOR APPLICATION NUMBER: 08/612,858
21 <151> PRIOR FILING DATE: 1996-03-12
23 <150> PRIOR APPLICATION NUMBER: 08/137,032
24 <151> PRIOR FILING DATE: 1993-03-18
26 <150> PRIOR APPLICATION NUMBER: PCT/GB20/00589
27 <151> PRIOR FILING DATE: 1992-04-02
29 <160> NUMBER OF SEQ ID NOS: 123
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33 <210> SEQ ID NO: 1
34 <211> LENGTH: 120
35 <212> TYPE: DNA
36 <213> ORGANISM: Cowpea mosaic virus
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40 cctgctccat ttccagacgt tacagcagta acttttgact taatcaacgy caaaataact 120
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43 <211> LENGTH: 40
44 <212> TYPE: PRT
45 <213> ORGANISM: Cowpea mosaic virus
47 <400> SEQUENCE: 2
48 Gly Pro Val Cys Ala Glu Ala Ser Asp Val Tyr Ser Pro Cys Met Ile
49 1 5 10 15
51 Ala Ser Thr Pro Pro Ala Pro Phe Ser Asp Val Thr Ala Val Thr Phe
52 20 25 30
54 Asp Leu Ile Asn Gly Lys Ile Thr
55 35 40
58 <210> SEQ ID NO: 3
59 <211> LENGTH: 27
60 <212> TYPE: PRT
61 <213> ORGANISM: Foot-and-mouth disease virus
63 <400> SEQUENCE: 3
64 Ser Thr Tyr Ser Arg Asn Ala Val Pro Asn Leu Arg Gly Asp Leu Gln
65 1 5 10 15
67 Val Leu Ala Gln Lys Val Ala Arg Thr Leu Pro
68 20 25

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72 <211> LENGTH: 81
73 <212> TYPE: DNA
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76 <400> SEQUENCE: 4
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78 aaaagggttc tcggactctt c                                     81
80 <210> SEQ ID NO: 5
81 <211> LENGTH: 81
82 <212> TYPE: DNA
83 <213> ORGANISM: Foot-and-mouth disease virus
85 <400> SEQUENCE: 5
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87 ccaacgagcc tgagaaggat c                                     81
89 <210> SEQ ID NO: 6
90 <211> LENGTH: 52
91 <212> TYPE: PRT
92 <213> ORGANISM: Foot-and-mouth disease virus
94 <400> SEQUENCE: 6
95 Gly Pro Val Cys Ala Glu Ala Ser Asp Val Tyr Ser Pro Cys Met Ile
96   1           5           10          15
98 Ala Ser Thr Tyr Ser Arg Asn Ala Val Pro Asn Leu Arg Gly Asp Leu
99           20           25           30
101 Gln Val Leu Ala Gln Lys Val Ala Arg Thr Leu Pro Ser Thr Pro Pro
102           35           40           45
104 Ala Pro Phe Ser
105           50
108 <210> SEQ ID NO: 7
109 <211> LENGTH: 156
110 <212> TYPE: DNA
111 <213> ORGANISM: Foot-and-mouth disease virus
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114 ggacctgttt gtgctgaagc ctcagatgtg tatagcccat gtatgatagc tagcaattat 60
115 agtagaaatg ctgttcctaa tttagagagga gatcttcaag ttttgggtca aaaggttgct 120
116 cggactcttc ctgactcc tctgtctcca ttttca                                     156
118 <210> SEQ ID NO: 8
119 <211> LENGTH: 52
120 <212> TYPE: PRT
121 <213> ORGANISM: Foot-and-mouth disease virus
123 <400> SEQUENCE: 8
124 Tyr Ser Pro Cys Met Ile Ala Ser Thr Tyr Ser Arg Asn Ala Val Pro
125   1           5           10          15
127 Asn Leu Arg Gly Asp Leu Gln Val Leu Ala Gln Lys Val Ala Arg Thr
128           20           25           30
130 Leu Pro Ser Thr Pro Pro Ala Pro Phe Ser Asp Val Thr Ala Val Thr
131           35           40           45
133 Phe Asp Leu Ile
134           50
137 <210> SEQ ID NO: 9

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144 gatcttcaag ttttggctca aaagggttgc cygactcttc ctgactctcc tctgctcca 120
145 ttttcagacg ttacagcagt aacttttgac ttaate 156
147 <210> SEQ ID NO: 10
148 <211> LENGTH: 156
149 <212> TYPE: DNA
150 <213> ORGANISM: Foot-and-mouth disease virus
152 <400> SEQUENCE: 10
153 atatcgggta catactatcg atcgtgaata tcatctttac gacaaggatt aaactctcct 60
154 ctagaagttc aaacccgagt ttccaacga gccgtgagaag gatcgtgagg aggacgaggt 120
155 aaaagtctgc aatgtcgtca ttgaaaactg aattag 156
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159 <212> TYPE: PRT
160 <213> ORGANISM: Artificial Sequence
162 <220> FEATURE:
163 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
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167 1 5 10 15
169 Ala Val Thr Phe Asp Leu Ile
170 20
173 <210> SEQ ID NO: 12
174 <211> LENGTH: 69
175 <212> TYPE: DNA
176 <213> ORGANISM: Artificial Sequence
178 <220> FEATURE:
179 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
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183 gacttaatc 69
185 <210> SEQ ID NO: 13
186 <211> LENGTH: 69
187 <212> TYPE: DNA
188 <213> ORGANISM: Artificial Sequence
190 <220> FEATURE:
191 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
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195 gacttaatc 69
197 <210> SEQ ID NO: 14
198 <211> LENGTH: 21
199 <212> TYPE: PRT
200 <213> ORGANISM: Artificial Sequence
202 <220> FEATURE:

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203 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
 205 <400> SEQUENCE: 14
 206 Ser Thr Asp Arg Pro Glu Gly Ile Glu Glu Gly Gly Glu Arg Asp
 207 1 5 10 15
 209 Arg Asp Arg Ser Asp
 210 20
 213 <210> SEQ ID NO: 15
 214 <211> LENGTH: 67
 215 <212> TYPE: DNA
 216 <213> ORGANISM: Artificial Sequence
 218 <220> FEATURE:
 219 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
 221 <400> SEQUENCE: 15
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 223 cggacgt 67
 225 <210> SEQ ID NO: 16
 226 <211> LENGTH: 59
 227 <212> TYPE: DNA
 228 <213> ORGANISM: Artificial Sequence
 230 <220> FEATURE:
 231 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
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 237 <211> LENGTH: 47
 238 <212> TYPE: PRT
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 242 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
 244 <400> SEQUENCE: 17
 245 Gly Pro Val Cys Ala Glu Ala Ser Asp Val Tyr Ser Pro Cys Met Ile
 246 1 5 10 15
 248 Ala Ser Thr Asp Arg Pro Glu Gly Ile Glu Glu Gly Gly Glu Arg
 249 20 25 30
 251 Asp Arg Asp Arg Ser Asp Val Thr Ala Val Thr Phe Asp Leu Ile
 252 35 40 45
 255 <210> SEQ ID NO: 18
 256 <211> LENGTH: 141
 257 <212> TYPE: DNA
 258 <213> ORGANISM: Artificial Sequence
 260 <220> FEATURE:
 261 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
 263 <400> SEQUENCE: 18
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 265 cgcctgagg gcacgagga agagggcggg gacgcgatc gtgatcggtc ggacgtcaca 120
 266 gcagtaactt ttgacttaat c 141
 268 <210> SEQ ID NO: 19
 269 <211> LENGTH: 16
 270 <212> TYPE: PRT

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271 <213> ORGANISM: Artificial Sequence
273 <220> FEATURE:
274 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
276 <400> SEQUENCE: 19
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282 <211> LENGTH: 52
283 <212> TYPE: DNA
284 <213> ORGANISM: Artificial Sequence
286 <220> FEATURE:
287 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
289 <400> SEQUENCE: 20
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292 <210> SEQ ID NO: 21
293 <211> LENGTH: 44
294 <212> TYPE: DNA
295 <213> ORGANISM: Artificial Sequence
297 <220> FEATURE:
298 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
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304 <211> LENGTH: 42
305 <212> TYPE: PRT
306 <213> ORGANISM: Artificial Sequence
308 <220> FEATURE:
309 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
311 <400> SEQUENCE: 22
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313   1           5           10           15
315 Ala Ser Thr Pro Ala Thr Gly Ile Asp Asn His Arg Glu Ala Lys Leu
316           20           25           30
318 Asp Val Thr Ala Val Thr Phe Asp Leu Ile
319           35           40
322 <210> SEQ ID NO: 23
323 <211> LENGTH: 126
324 <212> TYPE: DNA
325 <213> ORGANISM: Artificial Sequence
327 <220> FEATURE:
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330 <400> SEQUENCE: 23
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332 gctactggaa tcgataatca tagagaagct aaattggacg tcacagcagt aacttttgac 120
333 ttaatc           126
335 <210> SEQ ID NO: 24
336 <211> LENGTH: 39
337 <212> TYPE: PRT
338 <213> ORGANISM: Foot-and-mouth disease virus

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VERIFICATION SUMMARY DATE: 01/19/2001
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